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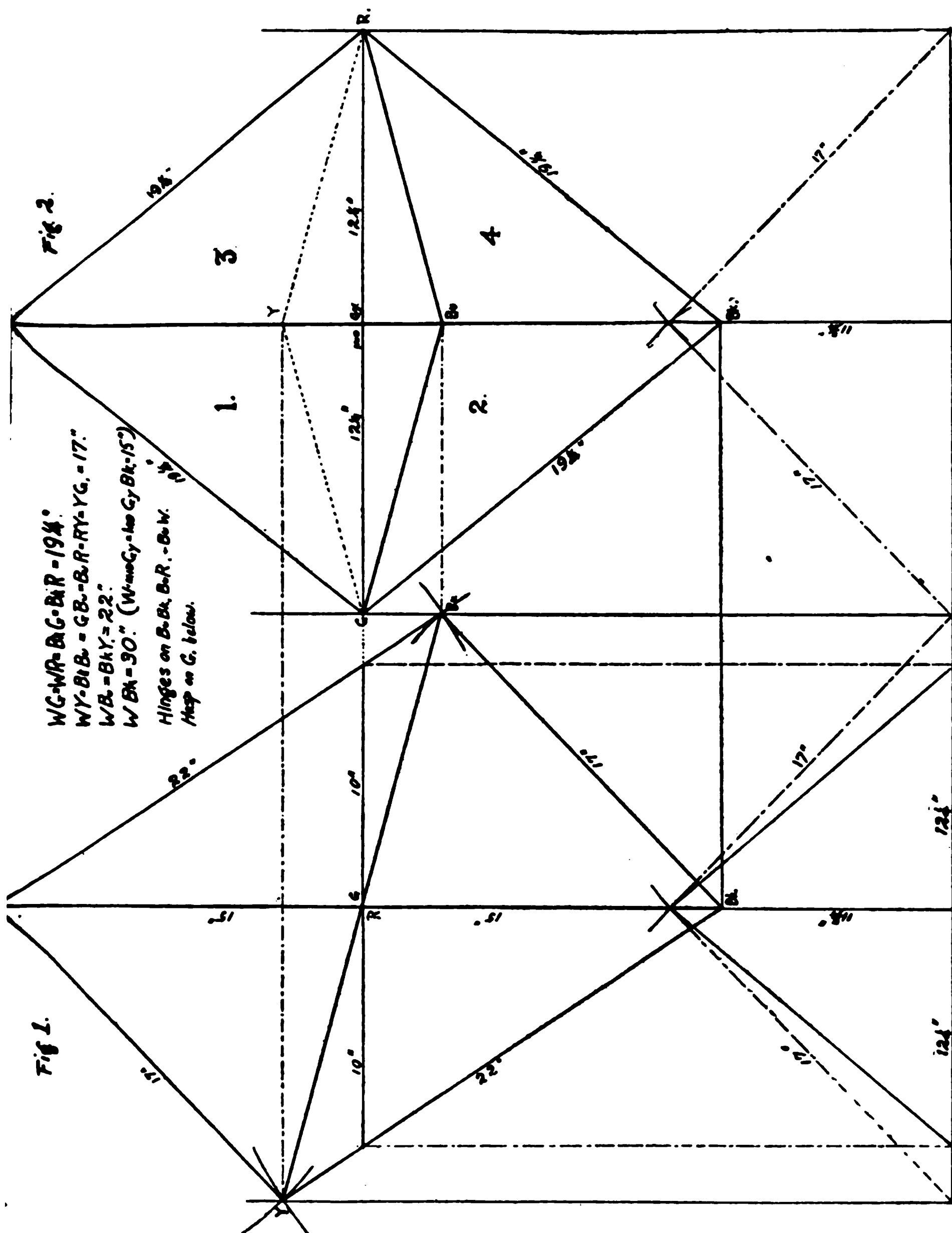
Cap. 1

VIA RAIL
ROBERT C. STANLEY ON
VIOLATION

133152

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other surfaces that represent planes of section in any direction. We have worked out only one of these: the horizontal plane that passes through R, G, and middle grey, and therefore also through a high blue and a low yellow. A separate rhombus of wood was made to the required dimensions; the hues were laid off along the periphery by reference to the painted pyramid; and the surface, showing all hues in all chromas at the tint of middle grey, was treated in the same way as those of the peripheral section. It is probably unnecessary to prepare more of these sectional surfaces; students who have followed the construction of the pyramid on the blackboard, and have been led to the complete model by way of the Hegg plate and the separate rhombus, find no special difficulty in following imaginary lines and covering imaginary planes within the color system.

The price of the wooden model was \$26, and of the iron base, \$3; the cost of the pigments, brushes, etc., a little over \$7. Given the necessary skill in painting, the model can therefore be reproduced for \$37.

EXPLANATION OF PLATES

PLATE I. Color-pyramid, closed, seen from back. Shows pin-hasps at G, and forked support.

Color pyramid, open. Shows vertical section.

PLATE II. Color pyramid, open. Shows peripheral section.

Color pyramid, closed, seen from front, the R-angle facing observer. Separate rhombus (horizontal section) at side.

note that the irrelevant word rain, number 19 of the mouse-box list, was reacted to with the word clouds in 2.419", that the five consecutive significant words, small, white, dance, tail and rat, were reacted to with the words faucet, sink, book, horse and cat in 2.981", 2.830", 2.233", 1.948", and 3.208" respectively, and finally, that the immediately succeeding irrelevant word book was reacted to with the word paper in only 2.205". The word rat, following as it did a series of significant words, caused an inhibition or delay of reaction which was very noticeable indeed.

The attitude of the subject toward the experiment is indicated by the following brief introspective report. "I tried to give, as I understood I was expected to, the first association that came to mind. I endeavored, however, at the same time,

TABLE I
Mouse-Box List of Experiment 1

No. of Word	Stimulus Word	Reaction Word	Reaction Time
1	House	Dog	1.670 sec.
2	Sky	Blue	1.067
3	Tree	Green	1.340
4	Sun	Yellow	1.740
5	Flower	Blue	1.293
6	Boston	City	1.637
7	Man	Tall	.955
8	Harvard	Yard	1.758
9	Knife	Cut	1.600
10	Psychology	Study	1.675
11	*Box	Wood	2.117
12	*Movement	Machine	2.090
13	Squeak ¹	Sugar	3.146
14	Woman	White	1.906
15	Drink	Water	1.733
16	Room	Wood	2.098
17	Study	Book	1.381
18	Consciousness	Brain	2.234
19	Rain	Clouds	2.419
20	*Small	Faucet	2.981
21	*White	Sink	2.830
22	*Dance	Book	2.233
23	*Tail	Horse	1.948
24	*Rat	Cat	3.208
25	Book	Paper	2.205
26	Money	Color	1.206
27	Crime	Murder	2.205
28	Ground	Yellow	2.206
29	Companion	Woman	1.667
30	Home	House	1.697

¹ This word was understood to be sweet; hence the associated word sugar.

TABLE 4

Results of 2

TABLE 5

Quantitative Results of Experiment 2

RESULTS FOR MR. W.			RESULTS FOR MR. L.	
	Irrelevant Words	Significant Words	Irrelevant Words	Significant Words
Mean	1.293 ⁹	1.258 ⁹	1.551 ⁹	1.729 ⁹
Mean Var.	.224	.145	.221	.343
Difference in Means, - 0.035 ⁹			+ 0.178 ⁹	
Extremes	Short	.929	.876	.824
	Long	2.613	2.168	3.386
Max. Range	1.684 ⁹		2.562 ⁹	

Means, and Differences in Means, for the series of Reaction Times by quarters.

1st Quarter (25 words)	1.304 ⁹	1.254	1.494 ⁹	2.000 ⁹
Difference	- 0.050		+ 0.506	
2nd Quarter	1.280	1.312	1.537	1.788
Difference	+ 0.032		+ 0.251	
3rd Quarter	1.435	1.321	1.644	1.634
Difference	- 0.114		- 0.010	
4th Quarter	1.127	1.154	1.493	1.360
Difference	+ 0.027		- 0.133	

L.'s reaction time to the former was about a quarter of a second longer than his reaction time to the latter; Mr. W.'s times differed by only thirty-two thousandths of a second. In the third and the fourth groups of twenty-five, the significant words were reacted to by Mr. L. even more quickly than the

the several experiments. As experiment 3 did not conform to the conditions prescribed for the tests its results have not been included in the general averages of this table.

TABLE 8
General Quantitative Results of Experiments

	Objects or Acts Known to Subject		Objects or Acts Unknown to Subject	
	Mean Variabilities		Mean Variabilities	
	Irrelevant Words	Significant Words	Irrelevant Words	Significant Words
Experiment				
1	.366'	.445'	.449'	.352'
2	.221	.343	.224	.145
3	.330	.223	.174	.112*
4	.181	.307	.251	.159
Average	.256	.365	.308	.219
	Maximum Range		Maximum Range	
Experiment				
1	2.253		1.518	
2	2.562		1.684	
3	2.232		1.334*	
4	1.627		1.725	
Average	2.147'		1.642'	

*Results for Experiment 3 are not included in the averages.

In conclusion we would say that although there are obviously many environmental and subjective factors whose relation to the results of an association reaction-time experiment must be known before the method can be considered reliable, this does not seem to us a fit place to enter upon a discussion of them. It has been our sole purpose in this paper to show that under ordinary conditions and with ordinary skill in experimentation we have succeeded in demonstrating to a class, much to the surprise and satisfaction of its members, that a simple list of associations and their reaction times may reveal intensely interesting facts concerning the content of consciousness.

LITERATURE ON TATBESTANDSDIAGNOSTIK

BINSWANGER, L. See Jung, C. G. Diagnostische Assoziationsstudien. XI. Beitrag.

TABLE I (Cont.)
Second Experiment (Left Hand Preceding)
Rt. Hd.

Depressions. Case	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Average	Average of 10 Normal Subjects
1st Series,	178	197	188	128	144	186	238	156	89	168	202	147	167.2	189
2nd "	188	188	194	131	134	191	234	155	89	179	203	158	168.3	191
3rd "	188	188	198	137	147	195	234	159	93	170	204	144	170.9	195
4th "	184	188	207	139	152	200	233	160	84	185	203	155	173.2	197
5th "	195	191	212	146	150	198	250	156	91	175	200	149	176.4	196
Av.	186.6	190.4	199.8	136.2	145.4	194.0	237.8	157.2	89.2	175.4	202.4	150.6	171.2	194

Lft. Hd.

Depressions. Case	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Average	Average of 10 Normal Subjects
1st Series,	152	170	191	144	143	152	206	141	87	177	181	146	156.3	178
2nd "	137	169	189	135	143	151	193	135	92	164	185	137	151.0	175
3rd "	154	170	187	162	147	159	196	140	88	171	191	129	157.4	177
4th "	161	171	193	143	149	164	202	144	85	160	178	165	157.2	176
5th "	152	168	202	144	142	170	211	145	85	161	185	160	158.0	175
Av.	151.2	169.6	192.4	144.6	144.8	159.2	201.6	141.0	87.4	166.6	184.0	147.4	155.8	176

TABLE II (Cont.)
Second Experiment. (Left Hand Preceding)
Rt. Hd.

Depressions. Case	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Average	Average of 10 Normal Subjects
1st interval, 0'-5'	31.2	32.6	37.0	22.4	24.2	33.0	44.0	26.4	14.6	30.0	32.8	24.0	29.5	35.0
2nd "	32.0	33.0	34.4	22.2	24.0	33.0	41.4	26.2	14.6	30.0	33.6	24.6	29.1	33.2
3rd "	31.4	31.8	33.4	23.4	24.2	32.6	39.6	26.4	15.0	29.8	33.4	25.2	28.8	32.2
4th "	31.4	31.8	32.2	22.2	24.4	32.4	38.8	26.4	15.0	29.8	34.2	25.6	28.3	31.6
5th "	30.2	31.0	31.8	23.4	23.8	31.4	37.0	25.8	15.0	28.8	33.6	25.4	27.8	31.4
6th "	30.4	30.2	31.0	22.6	24.0	31.6	37.0	26.0	15.0	28.0	34.8	26.0	27.6	30.7
f	.99	.97	.88	1.02	1.00	.98	.88	.99	1.02	.98	1.03	1.06	.96	.91

Lft Hd.

Depressions. Case	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Average	Average of 10 Normal Subjects
1st interval, 0'-5'	26.0	30.0	35.0	24.6	22.8	28.2	35.2	25.2	14.0	29.8	31.4	23.2	27.1	32.3
2nd "	26.0	29.6	34.4	24.2	25.0	27.2	34.4	24.2	14.6	28.6	32.4	24.4	26.8	30.8
3rd "	25.6	28.6	32.0	24.4	24.0	26.6	34.2	23.2	14.4	28.4	30.8	24.4	27.0	29.3
4th "	24.8	27.6	31.2	24.4	24.4	26.4	33.2	23.0	14.6	27.6	29.6	25.2	25.7	28.3
5th "	24.6	27.0	30.0	23.6	24.2	25.6	32.6	22.6	14.8	26.6	30.8	25.0	25.2	28.1
6th "	24.2	26.8	29.8	24.4	24.4	25.2	32.0	22.8	15.0	25.6	29.0	25.2	25.0	27.5
f	.96	.93	.90	.98	1.07	.93	.94	.92	1.05	.92	.97	1.07	.96	.89

to be regarded as the product of immediately physiological conditions.

That free use has been made of the hospital records and physicians' notes in the interpretation of the individual cases, is scarcely necessary to add. The writer is also under obligations to the physicians of Boston Insane Hospital, through whom access was obtained to Cases IX and X. Special acknowledgments are due to the writer's colleagues in the McLean Hospital, Dr. E. Stanley Abbott and Dr. Frederic H. Packard. Such clinical suggestiveness as these studies may possess is largely due to them.

the blue phase, the average green phase in the after-image was longer than the yellow one. While this is true of the averages, the detailed records show that it was not true in a majority of the individual experiments, which rather oftener than not fail to point to any correspondence. Perhaps the nearer approach to correspondence between original image and after-image shown in the uncontrolled experiments may be due to the fact that the motor conditions were here more nearly alike in the two halves of an experiment, where no special effort was made in either half; while the fact that a perfect correspondence is very far from existing even in the uncontrolled series may be accounted for by the difference in motor conditions, such as convergence, for example, that must still exist between the part of an experiment where the observer with open eyes looks through a stereoscope, and the part where he watches the after-image changes with closed eyes.

apart and 10 mm. deep, for the reception of the stems of the two forks. The block is separated from the box by a single layer of chamois skin, and is secured to it by two light brass screws.¹

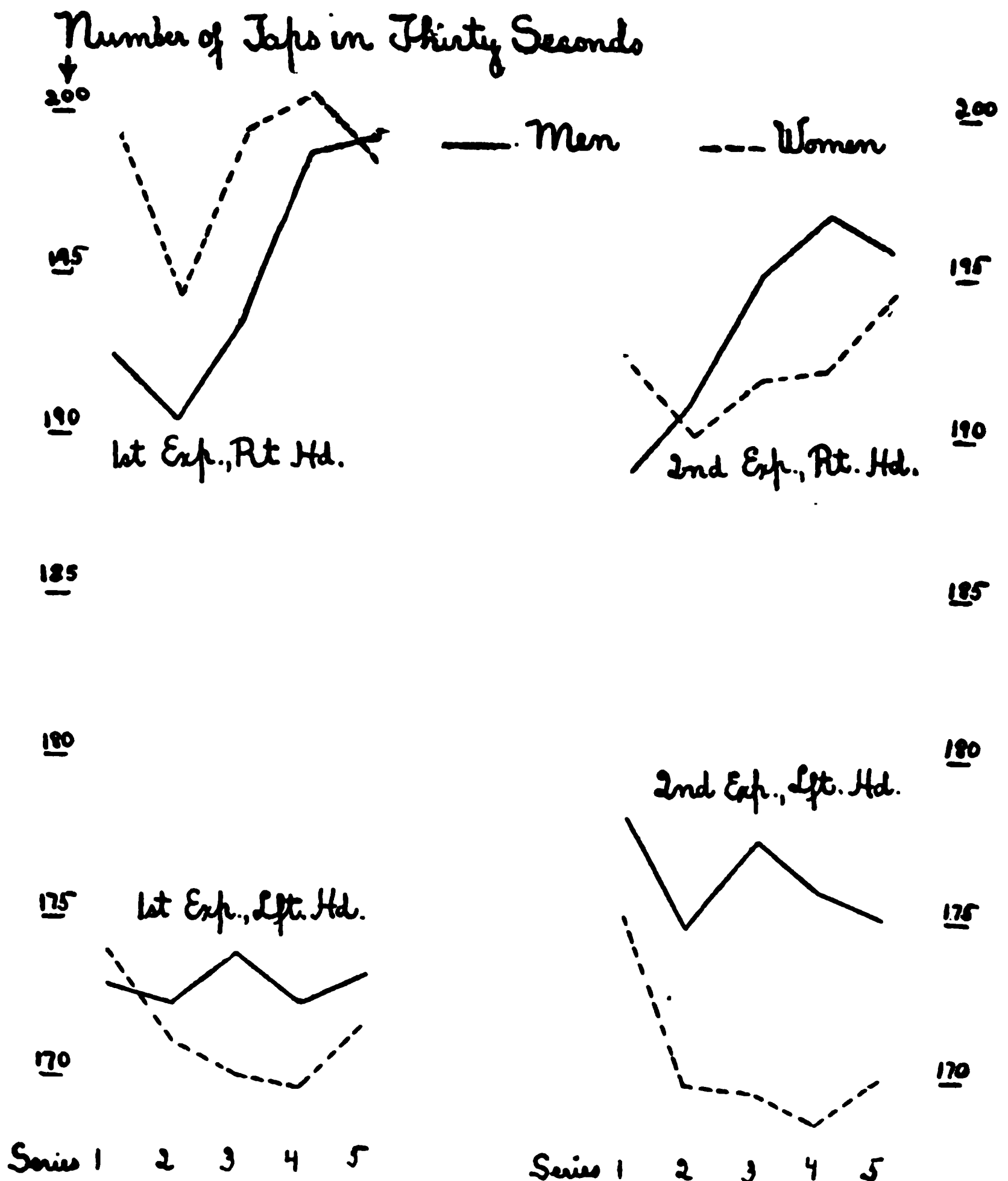
The method of use is evident from these details of construction. The standard fork is set in the one hole, the variable in the other, with the axes of both crosswise to the box. The silent fork is damped by the finger while its mate is sounding, the finger is then transferred to the sounding fork, and the other is struck. Other variable forks are inserted as required. It is plain that any form of method may be employed. The tones themselves are rather surprisingly full and clear.

For transportation, the forks are wrapped in chamois skin and slipped into the resonance box.

¹The purpose of the chamois-skin layer is to eliminate the high partials which otherwise obscure the fundamental of a light fork when it is first struck. The screws are necessary, since, if glue is employed, the leather loses its elasticity. The dimensions of the block are reduced to a minimum in order to avoid overloading the box. The holes are made as shallow as is compatible with a firm support of the forks, since a deeply drilled hole in a tall pedestal seriously impairs the tone of these forks.

seen that this first series is, relatively to the rest of the curve, very much higher in the women than in the men; *i. e.*, the women also indicate more strongly the presence of this second-

PLATE I



dary *Anfangsantrieb*. The indication of *Schlussantrieb* at the conclusion of each experiment (the last series with the left hand in the first experiment, and that with the right hand in the second) is also more marked in the women.

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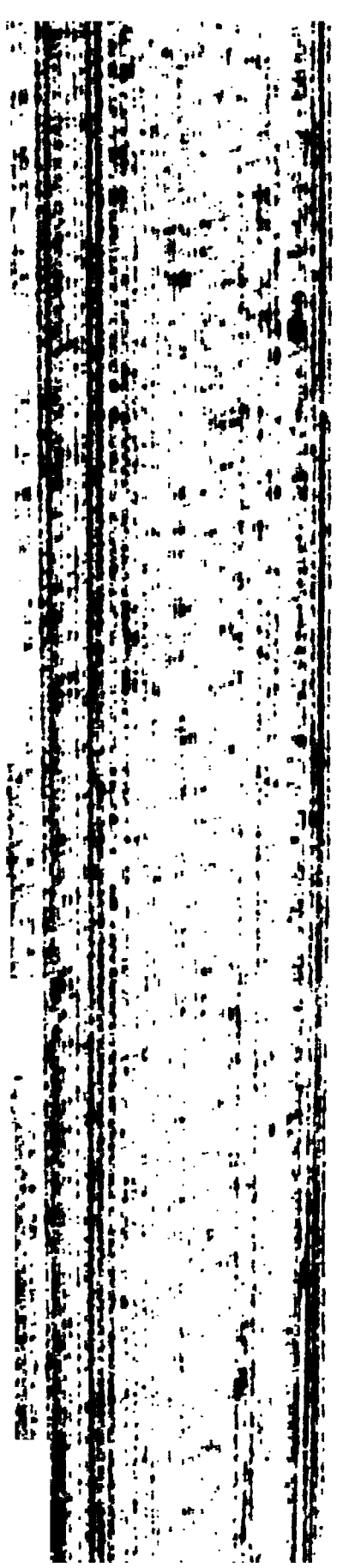
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